

WHAT IS CLAIMED IS:

1. A communication apparatus comprising:  
an authentication code storage section;  
an authentication section configured to perform  
5 authentication of another communication apparatus using  
an authentication code stored in said authentication  
code storage section; and

an authentication code updating section configured  
to calculate a new authentication code and update the  
10 authentication code stored in said authentication code  
storage section with the new authentication code when  
the authentication performed by said authentication  
section is successful.

2. The apparatus according to claim 1, further  
15 comprising:

a comparator configured to compare an input  
authentication code with a predetermined authentication  
code;

an ending section configured to end the  
20 authentication performed by said authentication section  
when both codes do not coincide with each other; and

a starting section configured to operate said  
authentication section and said authentication code  
updating section when the both codes coincide with each  
25 other.

3. The apparatus according to claim 2, wherein  
said authentication section performs the authentication

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of the other communication apparatus using said input authentication code when the authentication code is not stored in said authentication code storage section.

4. The apparatus according to claim 2, wherein  
5 said authentication section performs the authentication of the other communication apparatus using identification data of the other communication apparatus and the authentication code which is the input authentication code when said authentication code storage section  
10 does not store authentication data of the other communication apparatus.

5. The apparatus according to claim 1, wherein  
said authentication section calculates authentication data based on identification data of the other  
15 communication apparatus and the authentication code and collates the calculated authentication data with authentication data of the other communication apparatus.

6. The apparatus according to claim 5, wherein  
20 said authentication section calculates the authentication data based on the identification data of the other communication apparatus, the authentication code and a random number.

7. The apparatus according to claim 1, wherein  
25 said authentication code updating section subjects the authentication code stored in said authentication code storage section and used in the authentication

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to a predetermined calculation, and generates a new authentication code.

8. The apparatus according to claim 7, wherein said authentication code updating section subjects the authentication code stored in said authentication code storage section and used in the authentication and a random number to the predetermined calculation, and generates the new authentication code.

9. An authentication method between two communication apparatuses, comprising:

transmitting predetermined data to the apparatus to be authenticated from the apparatus demanding authentication;

calculating authentication data in the two communication apparatuses based on said predetermined data, an authentication code for calculation, and identification data of the apparatus to be authenticated;

comparing the obtained authentication data of both the apparatuses with each other in the apparatus demanding authentication; and

updating the authentication code for calculation in the two communication apparatuses based on the predetermined data and the authentication code for calculation when the authentication data of both the apparatuses coincide with each other.

10. The method according to claim 9, wherein

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an authentication code is input into each apparatus to be compared a predetermined authentication code and the authentication is ended when the input authentication code does not coincide with the predetermined authentication code.

11. The method according to claim 9, wherein an initial value of said authentication code for calculation is an input authentication code.

12. The method according to claim 9, wherein said predetermined data is a random number.

13. A communication apparatus having a function for authenticating another communication apparatus, comprising:

a comparator configured to compare an input first code or a prestored first code with a predetermined code;

an ending section configured to end an authentication when the first code and the predetermined code do not coincide with each other;

a transmitter configured to transmit a random number to the other communication apparatus when both of the first codes coincide with each other;

a collation section configured to calculate authentication data based on the random number, an authentication code, and identification data of the other communication apparatus, and collate the calculated authentication data with authentication data

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transmitted from the other communication apparatus; and  
an updating section configured to update the  
authentication code based on the random number and the  
authentication code when both of the authentication  
5 data coincide with each other.

14. The apparatus according to claim 13, wherein  
said updated authentication code is stored in a storage  
section, and said collation section uses the input  
first code as the authentication code when the  
10 authentication code is not stored in the storage  
section.

15. A communication apparatus comprising:  
a comparator configured to compare an input first  
code or a prestored first code with a predetermined  
15 code when authentication is requested by another  
communication apparatus;

an ending section configured to end an  
authentication when the first code and the  
predetermined code do not coincide with each other;

20 a receiver configured to receive a random number  
from the other communication apparatus;

a transmitter configured to calculate  
authentication data based on the random number, an  
authentication code, and identification data of own  
25 apparatus and transmit the calculated authentication  
data to the other communication apparatus; and

an updating section configured to receive a result

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of authentication from the other communication apparatus and update the authentication code based on the random number and the authentication code when the authentication is successful.

5           16. The apparatus according to claim 15, wherein said updated authentication code is stored in a storage section, and said transmission section uses the first code as the authentication code when the authentication code is not stored in the storage section.

10           17. An article of manufacture comprising a computer usable medium having a computer readable program code embodied therein, the computer readable program comprising:

15           a first computer readable program code for causing a computer to allow two communication apparatuses authenticate each other using authentication code; and

20           a second computer readable program code for causing a computer to calculate a new authentication code, and update the authentication code, when the authentication is successful.

25           18. The article of manufacture according to claim 17, wherein the first program code causes a computer to calculate authentication data based on an authentication code shared by the two communication apparatuses, identification data of one of the two communication apparatuses, and a predetermined code generated by said one of the two communication

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apparatuses and transmitted to the other of the two communication apparatuses and to collate the authentication data of the two communication apparatuses.

5           19. A communication apparatus comprising:

          an input section configured to input a first authentication code;

          an output section configured to output a second authentication code corresponding to the first authentication code input by the input section;

          an authentication section configured to perform authentication for setting a communication link with an external apparatus using the second authentication code output from the output section; and

15           an updating section configured to update the second authentication code to a code different from the second authentication code output from said output section when the authentication by the authentication section is successful.

20           20. An authentication method of a communication apparatus, the method comprising:

          inputting a first authentication code;

          outputting a second authentication code corresponding to the input first authentication code;

25           performing authentication for setting a communication link with an external apparatus using the output second authentication code; and

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updating the second authentication code to a code different from the output second authentication code when the authentication is successful.

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